

NATURAL RESOURCES CONSERVATION SERVICE

DOCUMENTATION REQUIREMENTS

GRADE STABILIZATION STRUCTURE (410)

FIELD DATA

The following is a list of the minimum field data to be collected:

1. Profile along centerline of structure, along centerline of principal spillway, and along centerline of emergency spillway if applicable;
2. Cross section and profile of upstream and downstream channel for capacity and stability analysis, to determine inlet conditions, and for determining tailwater conditions;
3. Survey of storage area to develop storage volumes, if applicable;
4. Soil investigation to determine suitability of the site, materials for construction, and structure stability.

DESIGN DATA

The following is a list of the minimum required design data, as applicable:

1. Purpose and type of the structure;
2. Hazard classification, drainage area, frequency of design storms, design discharge of principal and emergency spillways;
3. Adequacy of land treatment in the watershed, and sediment storage computations for the structure;
4. Calculation of tailwater conditions;
5. For storage type structures: stage-storage and stage-discharge curves for the site, principal spillway storm routing, and emergency spillway routing and design;
6. For full-flow structures: design of spillway(s) using appropriate design methods for the type of structure proposed;
7. Statement of adequacy of downstream channel stability and capacity;

8. Construction drawings shall include the following as a minimum:

- Plan view including location map and all structure components;
- Profile along centerline of embankment and cross section of embankment at location of principal spillway. If applicable, profile along centerline of emergency spillway and cross section of emergency spillway;
- Reference distances and elevations to properly locate the structure and embankment;
- Material and dimensions of the principal and emergency spillways and all appurtenances needed to install and protect the structure;
- Lime, fertilizer, and seeding requirements according to practice standard 342, Critical Area Planting (may be included as a specification instead);
- Quantities of materials;
- Critical Inspection Items;
- Utilities statement and Excavation Safety statement.

9. Construction and material specifications to ensure proper installation of the structure and appurtenances;

10. Written Operation and Maintenance (O&M) plan.

PRE-CONSTRUCTION & INSPECTION

1. Preconstruction Meeting With Landowner And Contractor. This is a meeting to explain the drawings and specifications, discuss requirements for construction and material certifications, level of staking needed, safety issues, utilities notification, and other topics. Document the following as a minimum:

- Time and date of meeting;
- Names of attendees;
- Items discussed and decisions made.

2. Layout And Staking Of Practices. Document:
 - Survey notes showing layout of the practices, including date and who performed the staking;
 - If the contractor provides staking, then document any reviews made to ensure proper placement of the practice.
3. Utilities Notification. Can use form ENG-5 and ENG-6 to assist in tracking utility notifications (See NEM §MA503). Document:
 - Initial discussion with landowner about his or her responsibility to notify utilities;
 - Information from landowner about existence and location of known utilities;
 - Assurances that utility company has been notified, including staking by utilities.
4. Inspection During Construction. Document:
 - All inspections made during construction, including all those identified on the drawings as critical inspection items;
 - Include visual inspections and conclusions, surveys, tests and test results;
 - Discussions with landowner and contractor;
 - Photographs taken before and during construction;
 - Approval by designer of any changes from the drawings or specifications before implementation of the change.

6. Notes and measurements to show that any special design features were met;
7. Adequacy of seeding and fencing as applicable. Refer to documentation requirements for associated practices (Critical Area Planting (342) and Fence (382)) for construction check data required;
8. Notes on cleanup and disposal of excess fill material.

CERTIFICATION

The following is a list of what must be certified by a person with the required approval authority for the installed practice:

1. Final quantities and documentation for quantity changes;
2. Statement on the as-built drawings that the installed practices meet or exceed the requirements of the NRCS practice standards;
3. Record in the case file the number of grade stabilization structures installed;
4. Report in PRMS, as applicable.

CONSTRUCTION CHECK

The following is a list of the minimum required data to support the as-built drawing:

1. Profile along top of embankment, along centerline of principal spillway at least 100 feet upstream and downstream to properly show inlet and outlet conditions, and along centerline of emergency spillway;
2. Cross section of emergency spillway at the control section, if applicable;
3. Critical elevations of spillways and appurtenances;
4. Strength, slump, air-entrainment, and other needed information for concrete structure documentation;
5. Materials documentation to certify quality as stated on drawings and specifications;